SA-VE312/VE315/WMS315/ SS-CN315/V315

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model
Australian Model

Ver 1.1 2004. 01

- The SA-VE312 system consists of one unit of SA-WMS315 and two units of SS-V315.
- The SA-VE315 system consists of one unit of SA-WMS315, one unit SS-CN315 and four units of SS-V315.

Photo: SA-WMS315

Photo: SS-V315

Photo: SS-CN315

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION :

with 8 Ω loads both channels driven, from 20 - 150 Hz; rated 75 W per channel minimum RMS power, with no more than 0.8% total harmonic distortion from 250 mW to rated output.

SS-V315 (front and rear speakers)

Speaker system	Full range, magnetically shielded
Speaker units	5 × 10 cm (2 × 4 in.), cone type
Enclosure type	Bass reflex
Rated impedance	8 Ω
Power handling capacity	
Maximum input power:	100 W
Sensitivity level	87 dB (1W, 1m)
Frequency range	90 Hz - 20,000 Hz
Dimensions (w/h/d)	Approx. 68 × 150 × 125 mm ($2^{3}/_{4} \times 6 \times 5$ in.), including front grille
Mass	
European model:	Approx. 640 g (1 lb 7 oz) each
Other model:	Approx. 740 g (1 lb 10 oz) each

SS-CN315 (center speaker)

Speaker system	Full range × 2, magnetically shielded
Speaker units	5 × 10 cm (2 × 4 in.), cone type
Enclosure type	Bass reflex
Rated impedance	8 Ω
Power handling capacity	
Maximum input power:	120 W
Sensitivity level	89 dB (1W, 1m)
Frequency range	90 Hz - 20,000 Hz
Dimensions (w/h/d)	Approx. 301 × 68 × 125 mm ($11^{7}/_{8} \times 2^{3}/_{4} \times 5$ in.), including front grille
Mass	
European model:	Approx. 1.4 kg (3 lb 1 oz) each
Other model:	Approx. 1.5 kg (3 lb 5 oz) each

SA-WMS315 (subwoofer)

System

Speaker system	Active subwoofer, magnetically shielded
Speaker unit	Woofer : 16 cm ($6^{3}/_{8}$ in.), cone type
Enclosure type	Advanded SAW type
Continuous RMS power output	(8 Ω, 20 - 150 Hz, 0.8 % THD)
European model:	50 W
Other model:	75 W
Reproduction frequency range	28 Hz - 200 Hz
High frequency cut-off frequency	200 Hz

Inputs

LINE IN (input pin jack)
SPEAKER IN (input terminals)

Outputs

LINE OUT (output pin jack)
SPEAKER OUT (output terminals)

General

Power requirements	
European model:	220 - 230 V AC, 50/60 Hz
Other model:	120 V AC, 60 Hz
Power consumptions	
European model:	50 W
Other model:	70 W
Dimensions (w/h/d)	Approx. 205 × 385 × 385 mm ($8^{1}/_{8} \times 15^{1}/_{4} \times 15^{1}/_{4}$ in.), including front grille
Mass	Approx. 10.5 kg (23 lb 2 oz)

Supplied accessories

SA-VE315

Foot pads (20)
Audio connecting cords (1)
Speaker connecting cords, 10 m (32 ft $9^{3}/_{4}$ in.) (2)
Speaker connecting cords, 2.5 m (8 ft $2^{1}/_{2}$ in.) (5)

SA-VE312

Foot pads (8)
Audio connecting cords (1)
Speaker connecting cords, 2.5 m (8 ft $2^{1}/_{2}$ in.) (4)

Design and specifications are subject to change without notice

MICRO SATELLITE SYSTEM

9-929-075-12
2004A16-1
© 2004.01

Sony Corporation
Home Audio Company
Published by Sony Engineering Corporation

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer: Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

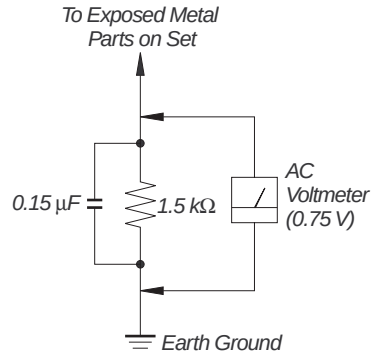


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

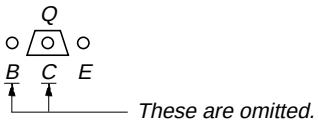
LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SECTION 1
DIAGRAMS

1-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- ⚬——— : parts extracted from the component side.
- ▒▒▒▒ : Pattern from the side which enables seeing.
- Indication of transistor.



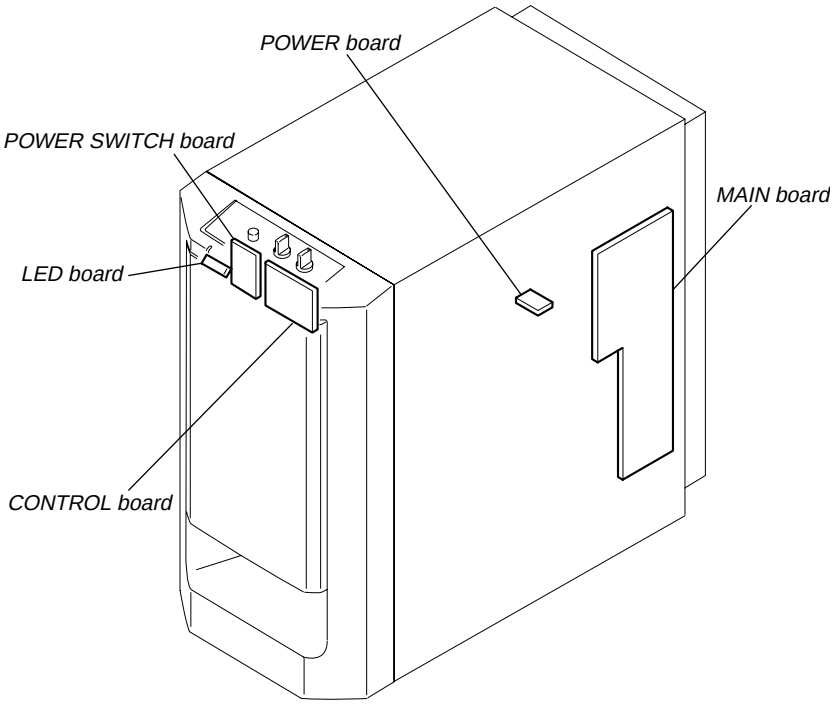
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ⊣▭⊢ : nonflammable resistor.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

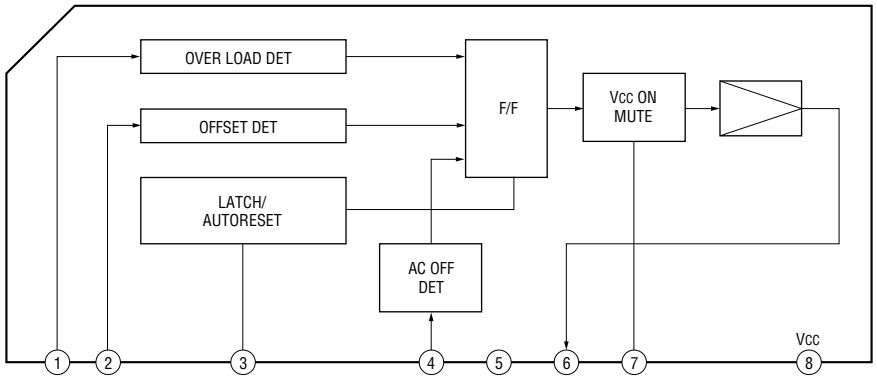
- **B +** : B+ Line.
- **B −** : B– Line.
- Voltages are dc with respect to ground under no-signal conditions.
  no mark : AUDIO
- Voltages are taken with a VOM (input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Abbreviation
  CND : Canadian model

- **Circuit Boards Location**
  SA-WMS315

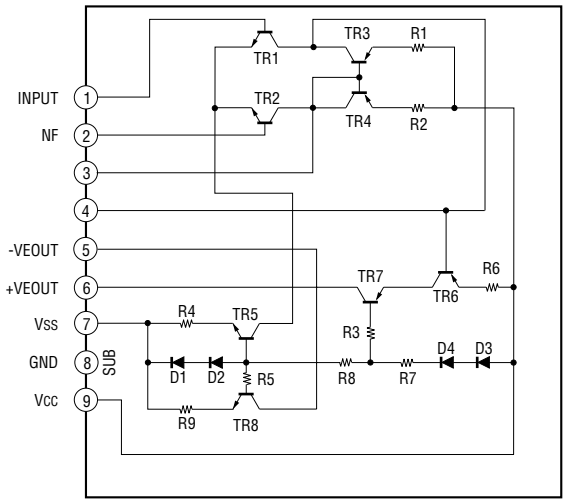


- **IC Block Diagrams**

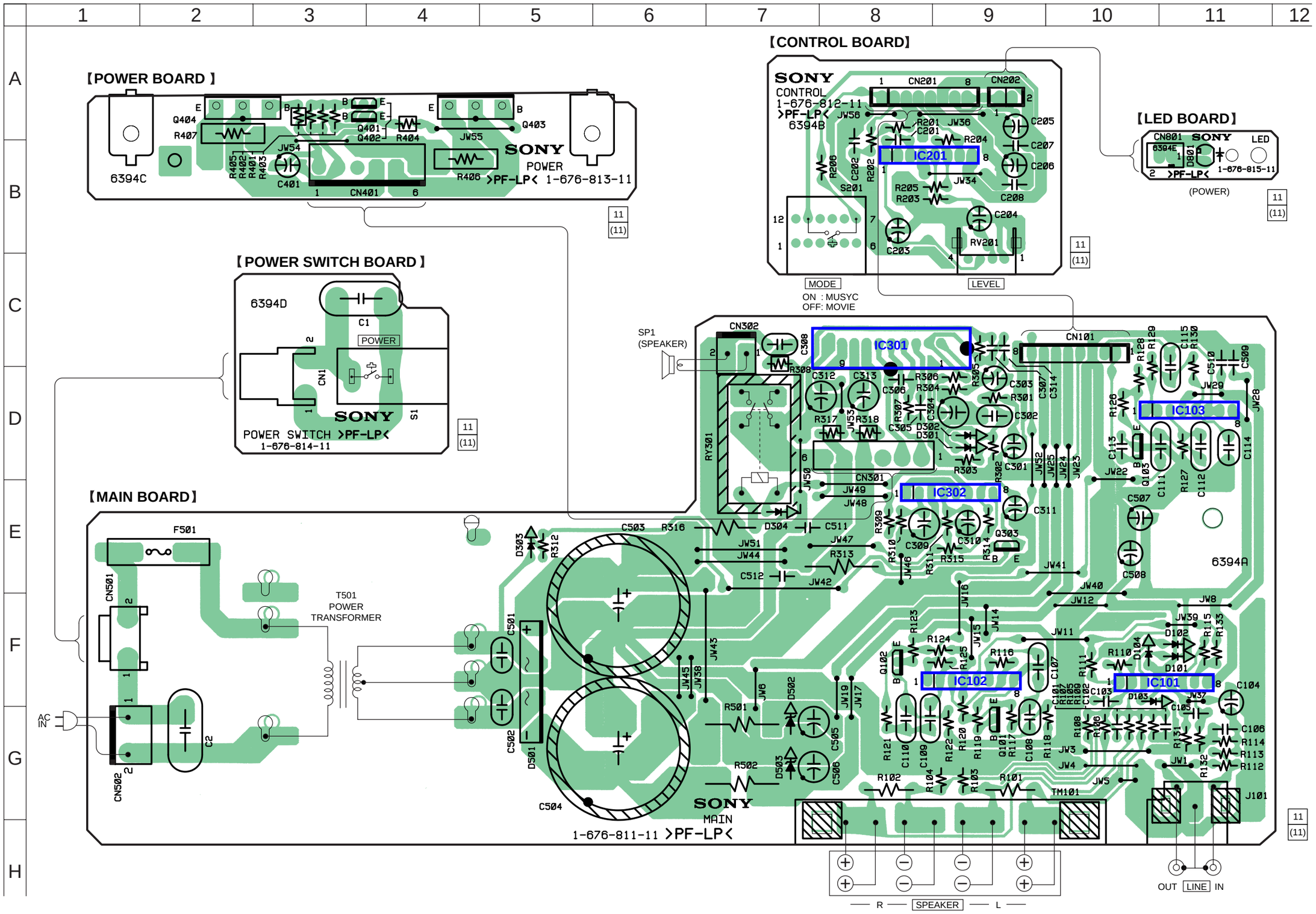
IC302 uPC1237H



IC301 STK350-230



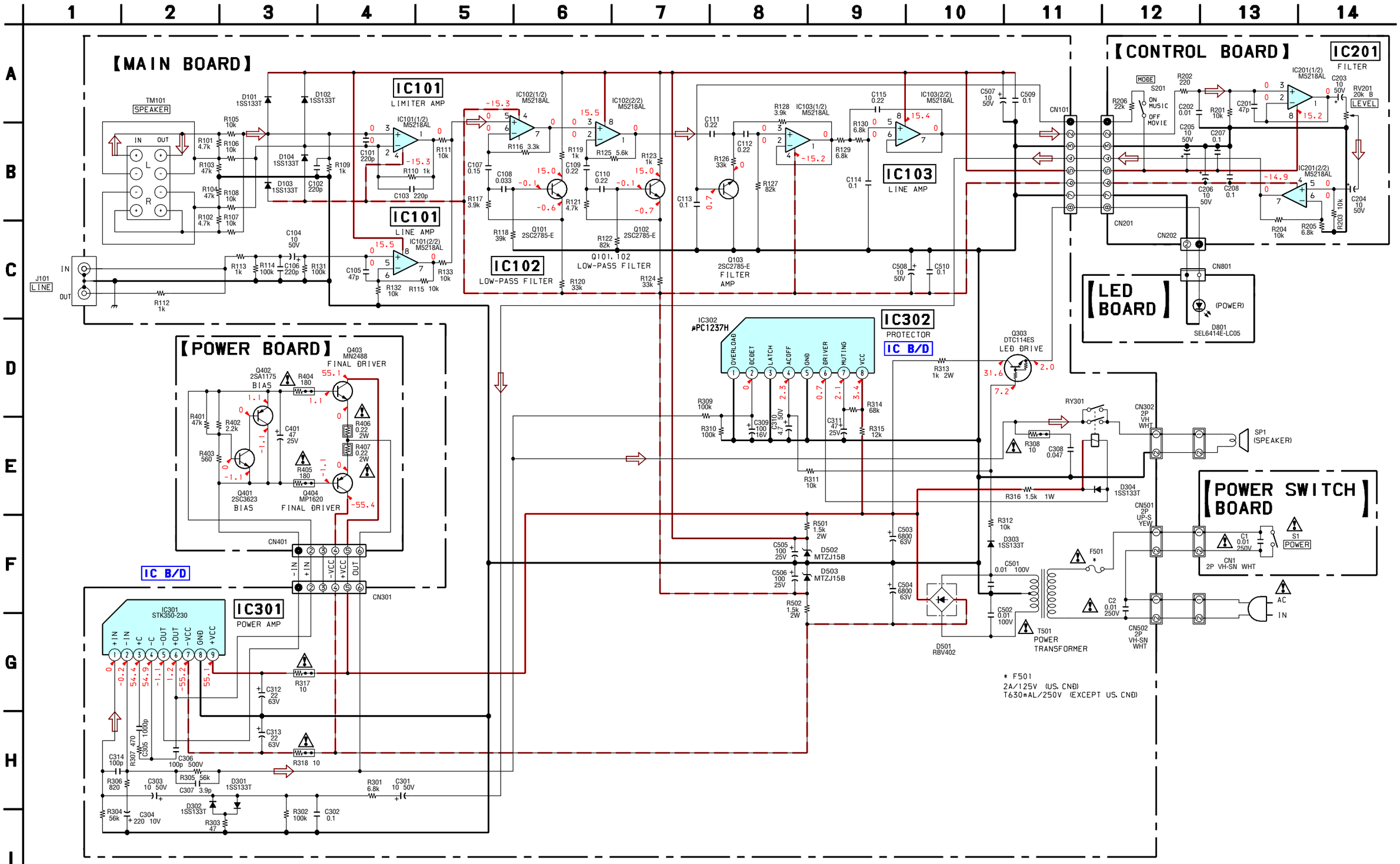
1-2. PRINTED WIRING BOARD (SA-WMS315) • See page 3 for Circuit Boards Location.
(EXCEPT AEP,UK)



• **Semiconductor Location**

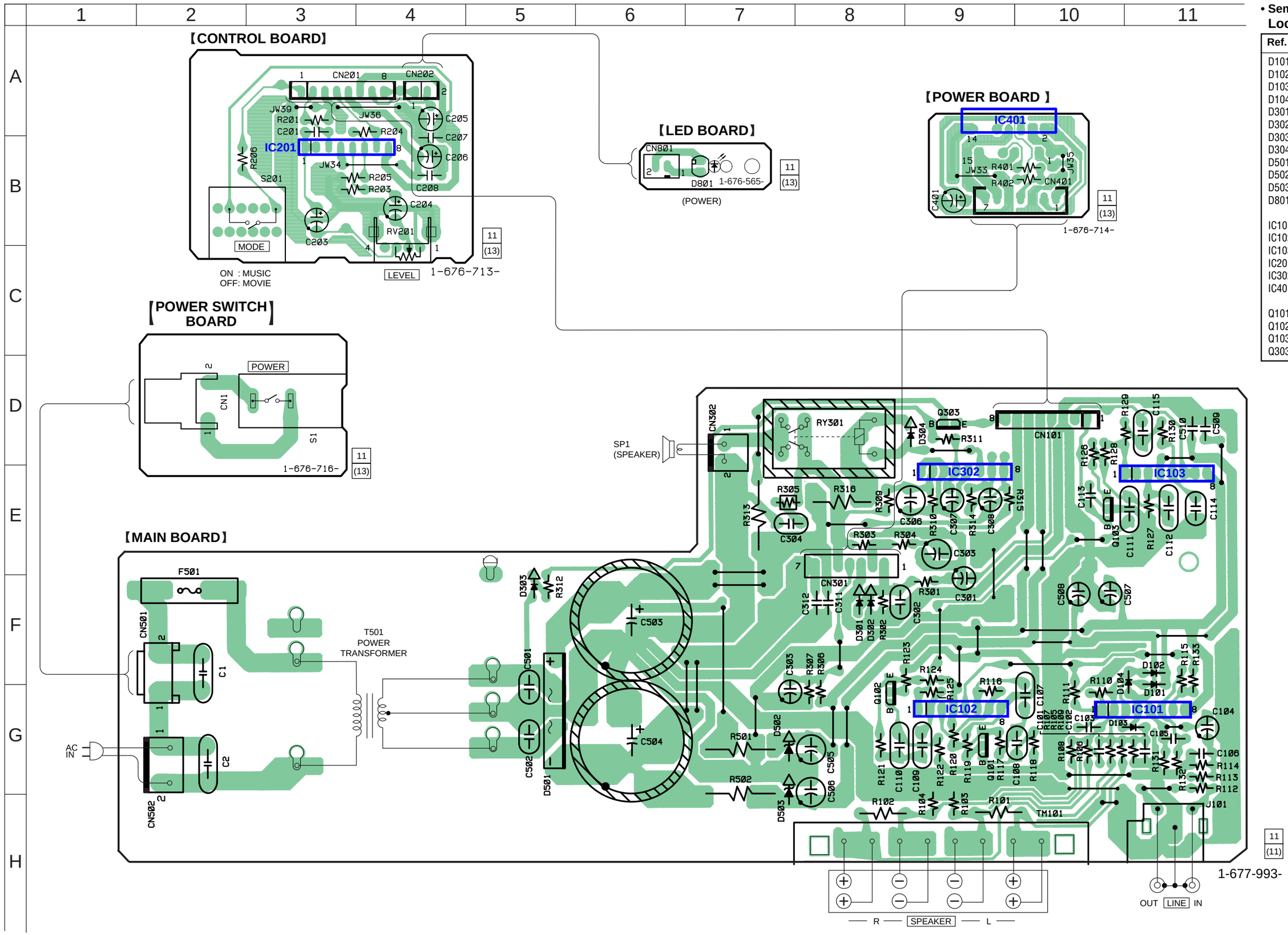
Ref. No.	Location
D101	F-11
D102	F-11
D103	F-11
D104	F-11
D301	D-8
D302	D-8
D303	E-5
D304	E-7
D501	G-5
D502	F-7
D503	G-7
D801	B-11
IC101	F-11
IC102	F-9
IC103	D-11
IC201	B-8
IC301	C-9
IC302	D-9
Q101	G-9
Q102	F-8
Q103	D-10
Q303	E-9
Q401	A-3
Q402	A-3
Q403	A-5
Q404	A-2

1-3. SCHEMATIC DIAGRAM (SA-WMS315) • See page 4 for IC block diagrams.
(EXCEPT AEP,UK)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

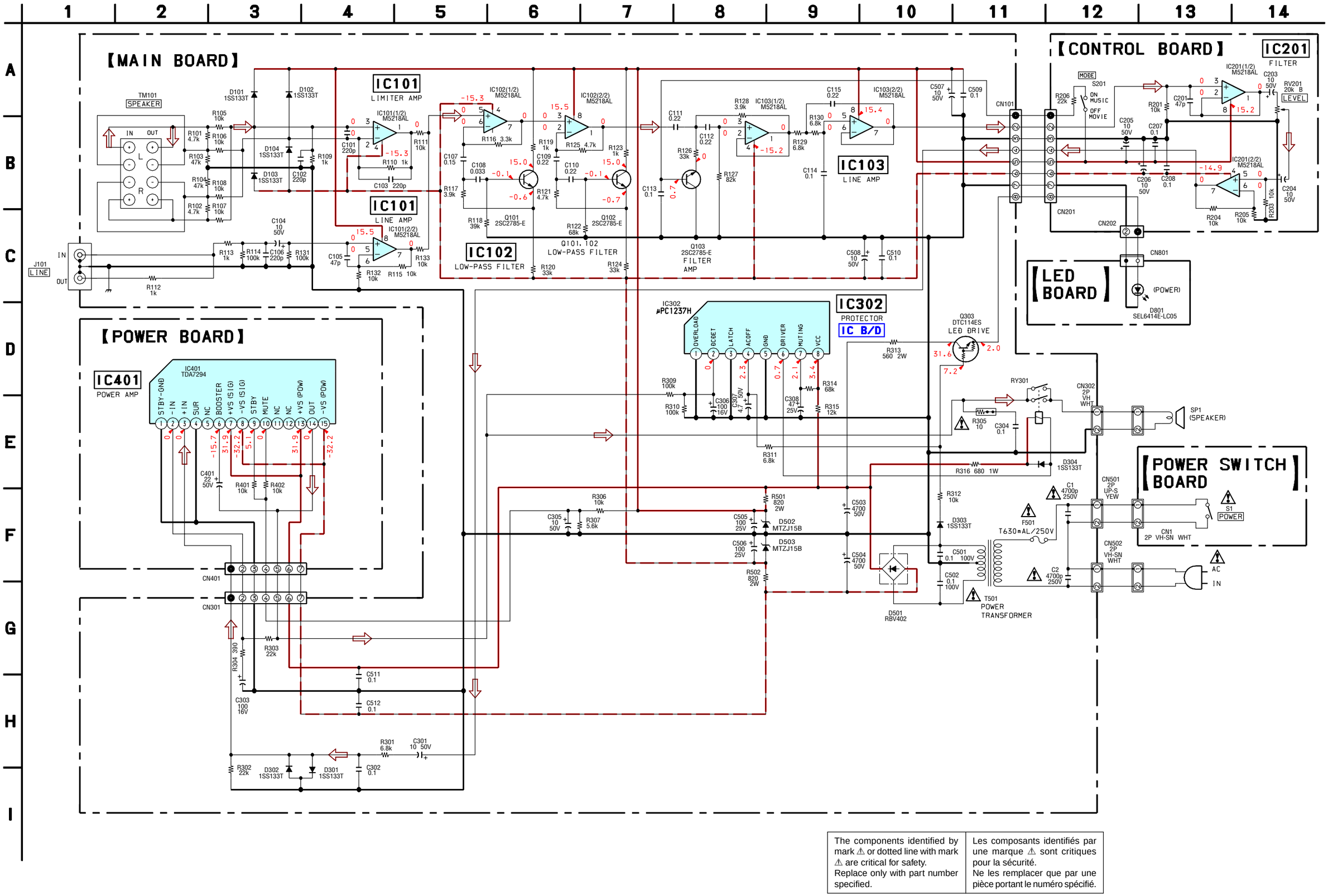
1-4. PRINTED WIRING BOARD (SA-WMS315) • See page 3 for Circuit Boards Location.
(AEP,UK)



• **Semiconductor Location**

Ref. No.	Location
D101	G-11
D102	G-11
D103	G-11
D104	G-11
D301	F-8
D302	F-8
D303	F-5
D304	D-9
D501	G-5
D502	G-7
D503	H-7
D801	B-7
IC101	G-11
IC102	G-9
IC103	E-11
IC201	B-3
IC302	F-9
IC401	A-9
Q101	G-9
Q102	G-8
Q103	E-10
Q303	D-9

1-5. SCHEMATIC DIAGRAM (SA-WMS315) • See page 4 for IC block diagrams.
(AEP,UK)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

SECTION 2
EXPLODED VIEWS

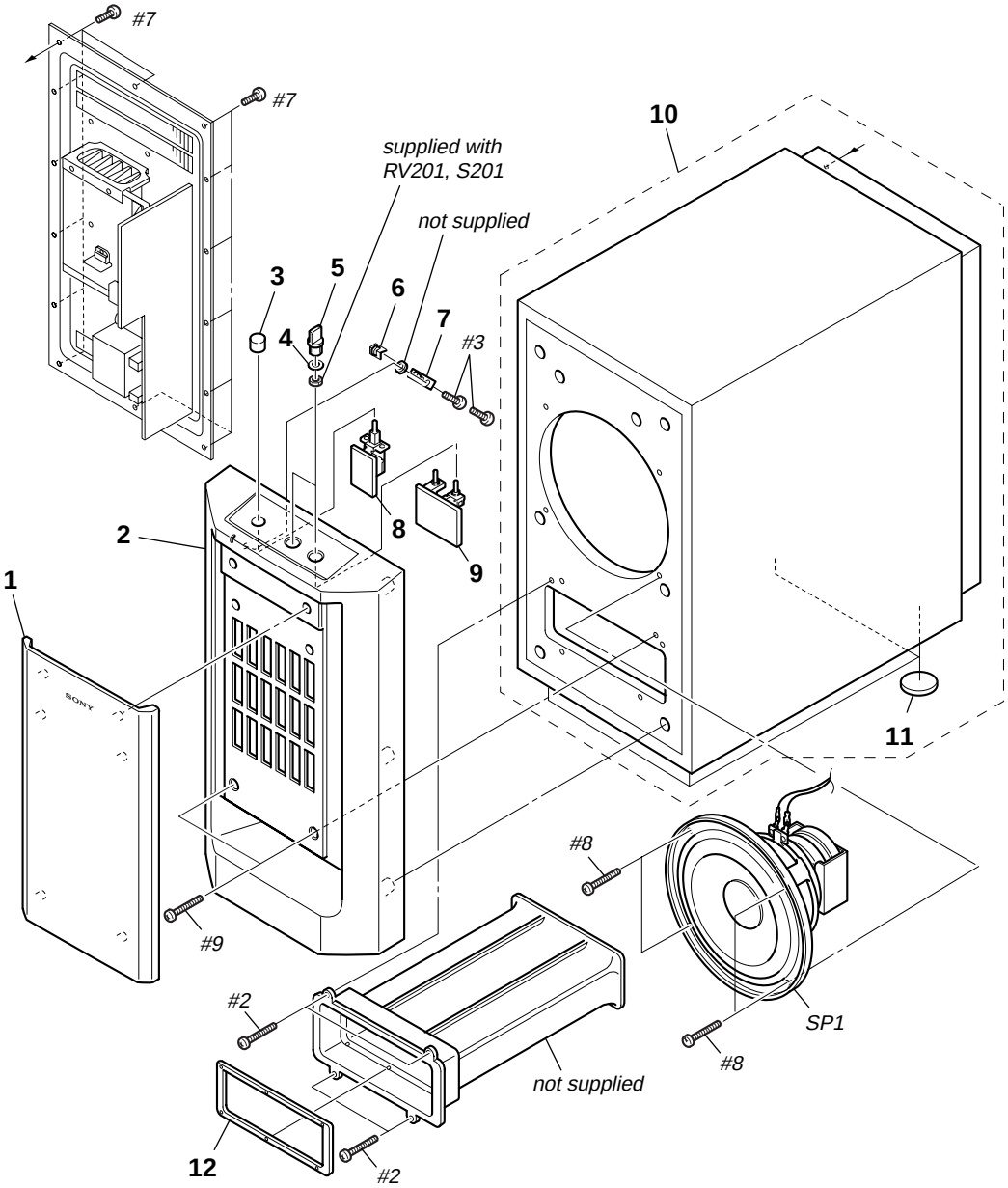
NOTE:

- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND: Canadian model.
  AUS : Australian model.
  SP : Singapore model.
  MY : Malaysia model.
  AR : Argentine model.
  G : German model.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

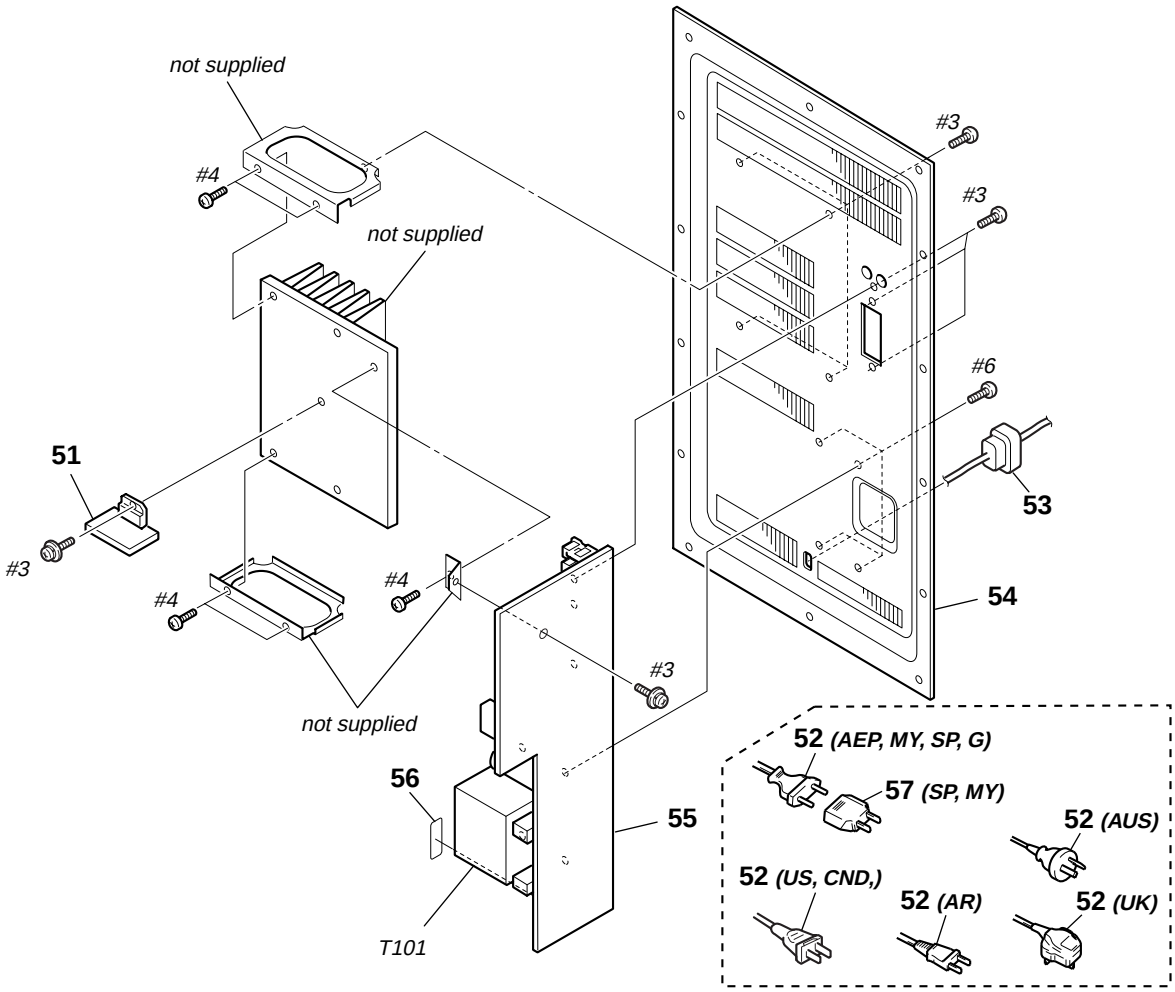
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

2-1. SA-WMS315 (1)



Ref. No.	Part No.	Description	Remarks
1	X-4952-542-1	FRAME ASSY, GRILLE	
2	X-4952-541-1	PANEL ASSY, FRONT	
3	4-973-938-41	KNOB (A), PUSH	
4	4-227-298-01	SHEET	
5	4-226-228-01	KNOB (VOL)	
6	4-226-213-01	INDICATOR	
7	1-676-565-11	LED BOARD (AEP,UK)	
7	1-676-815-11	LED BOARD (EXCEPT AEP,UK)	
8	1-676-716-11	POWER SWITCH BOARD (AEP,UK)	
8	1-676-814-11	POWER SWITCH BOARD (EXCEPT AEP,UK)	
9	A-4428-444-A	CONTROL BOARD,COMPLETE (AEP,UK)	
9	A-4428-531-A	CONTROL BOARD,COMPLETE (EXCEPT AEP,UK)	
10	A-4411-960-A	CABINET ASSY, SPEAKER	
11	4-981-864-01	FOOT	
12	4-226-227-01	PACKING (D)	
SP1	1-529-593-11	SPEAKER (16cm)	

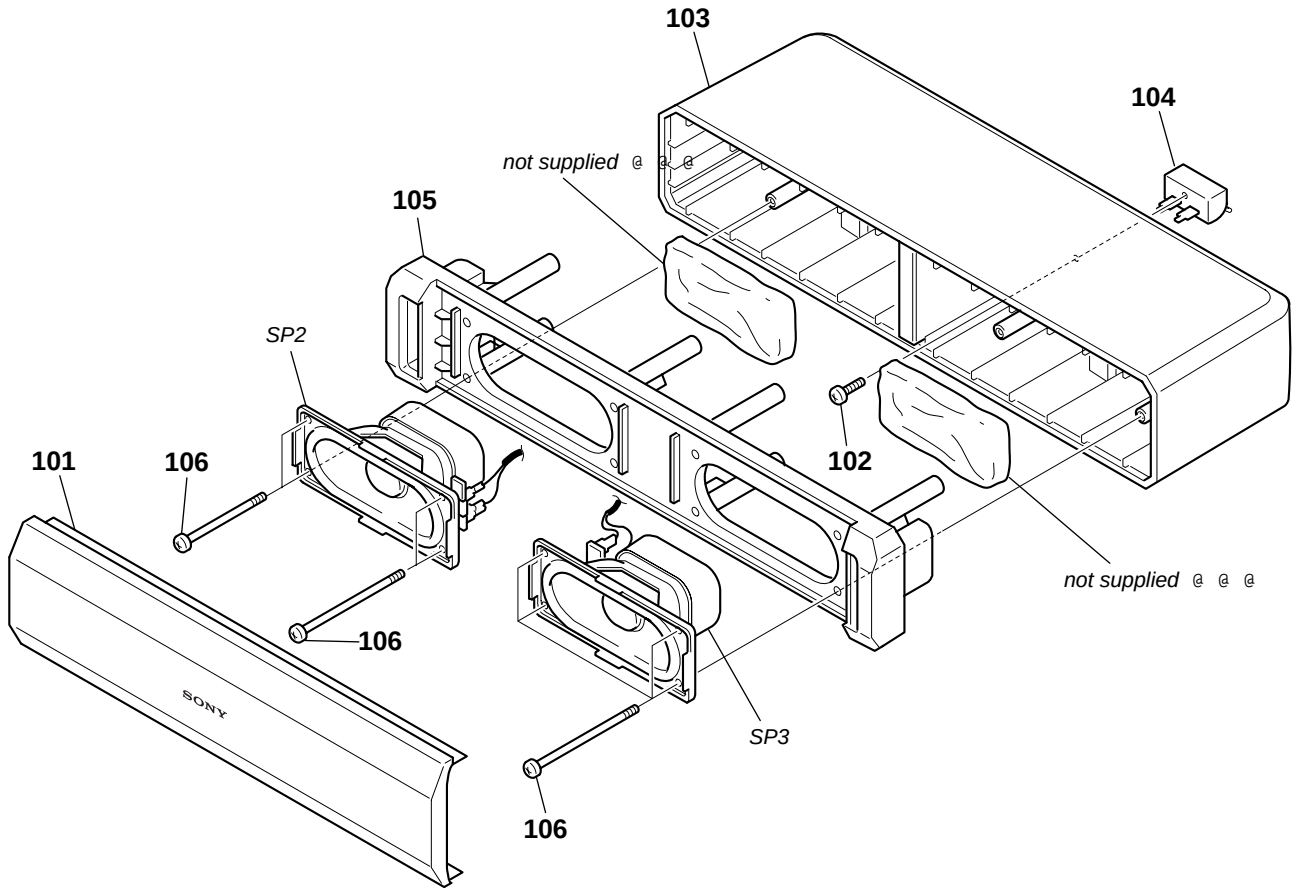
2-2. SA-WMS315 (2)



Ref. No.	Part No.	Description	Remarks
51	1-676-714-11	POWER BOARD (AEP,UK)	
51	1-676-813-11	POWER BOARD (EXCEPT AEP,UK)	
⚠52	1-696-571-21	CORD, POWER (UK)	
⚠52	1-696-845-31	CORD, POWER (AUS)	
⚠52	1-782-603-11	CORD, POWER (AEP,MY,SP,G)	
⚠52	1-783-531-12	CORD, POWER (US,CND)	
⚠52	1-783-941-21	CORD, POWER (AR)	
* 53	3-703-244-00	BUSHING (2104), CORD	
54	4-227-118-11	PANEL, REAR (US,CND)	
54	4-227-118-21	PANEL, REAR (EXCEPT US,CND)	
55	A-4428-530-A	MAIN BOARD,COMPLETE (EXCEPT AEP,UK)	
55	A-4726-478-A	MAIN BOARD,COMPLETE (AEP,UK)	
* 56	3-701-946-23	LABEL, FUSE RATING (US,CND)	
⚠57	1-569-008-21	ADAPTOR, CONVERSION 2P (SP,MY)	
⚠T101	1-435-335-11	TRANSFORMER, POWER (US,CND)	
⚠T101	1-435-336-11	TRANSFORMER, POWER (AEP,UK,G)	
⚠T101	1-435-337-11	TRANSFORMER, POWER (AR,MY,SP,AUS)	

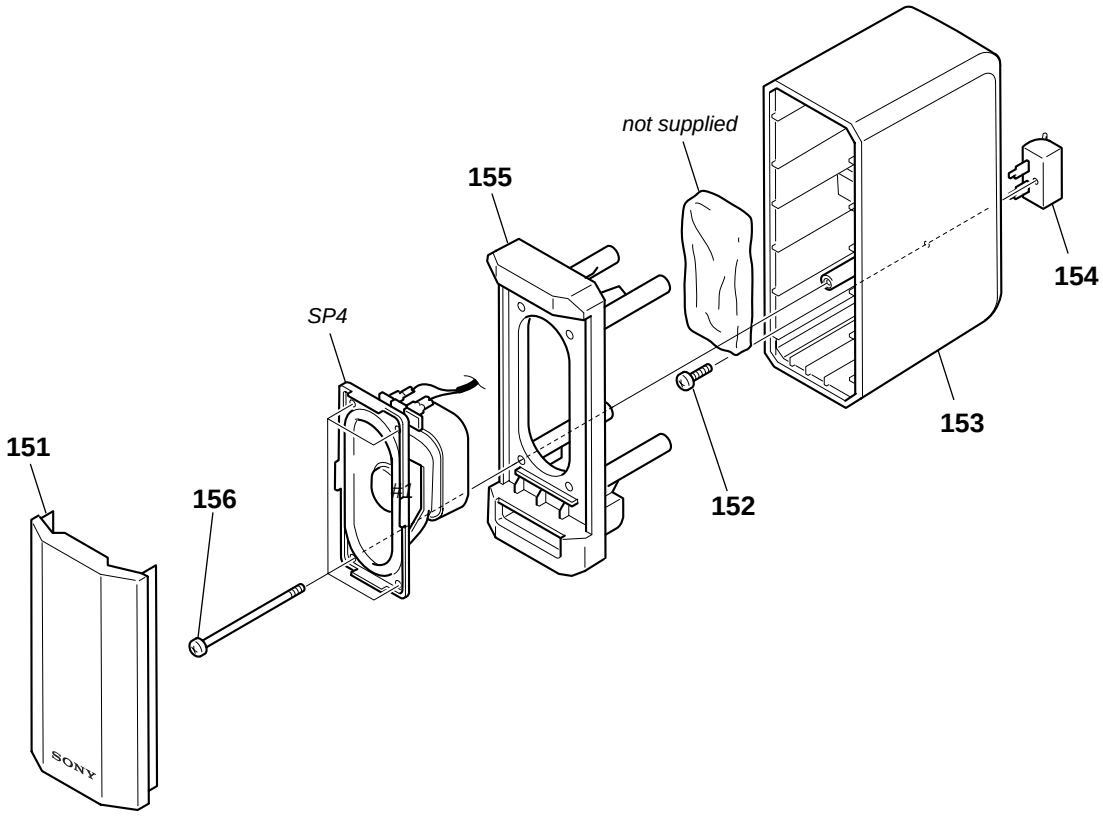
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

2-3. SS-CN315



Ref. No.	Part No.	Description	Remarks
101	X-4952-576-1	GRILLE (CN) ASSY, FRONT	
102	3-703-564-31	SCREW (3.5)	
103	X-4952-577-1	CABINET (CN) ASSY	
104	1-694-516-11	TERMINAL, SPEAKER	
105	4-226-378-01	PANEL (CN), FRONT	
106	4-226-531-01	SCREW (3.5 X 62), +P TAPPING	
SP2	1-529-596-11	SPEAKER (5X10cm)	
SP3	1-529-596-11	SPEAKER (5X10cm)	

2-4. SS-V315



Ref. No.	Part No.	Description	Remarks
151	X-4952-570-1	GRILLE (SR) ASSY, FRONT	
152	3-703-564-31	SCREW (3.5)	
153	X-4952-571-1	CABINET (SR) ASSY	
154	1-694-516-11	TERMINAL, SPEAKER	

Ref. No.	Part No.	Description	Remarks
155	4-226-307-01	PANEL (SR), FRONT	
156	4-226-531-01	SCREW (3.5 X 62), +P TAPPING	
SP4	1-529-595-11	SPEAKER (5X10cm)	

SECTION 3
ELECTRICAL PARTS LIST

CONTROL | LED | MAIN

Ver 1.1 2004.01

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- COILS
  uH: µH
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Abbreviation
  CND: Canadian model.
  AUS : Australian model.
  SP : Singapore model.
  MY : Malaysia model.
  AR : Argentine model.
  G : German model.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
	A-4428-444-A	CONTROL BOARD, COMPLETE (AEP,UK)			
	A-4428-531-A	CONTROL BOARD, COMPLETE (EXCEPT AEP,UK)			
		**********			
		< CAPACITOR >			
C201	1-162-215-31	CERAMIC	47PF	5%	50V
C202	1-131-679-31	MYLAR	0.01UF	5%	50V
C203	1-126-964-11	ELECT	10uF	20.00%	50V
C204	1-126-964-11	ELECT	10uF	20.00%	50V
C205	1-126-964-11	ELECT	10uF	20.00%	50V
C206	1-126-964-11	ELECT	10uF	20.00%	50V
C207	1-130-495-00	MYLAR	0.1uF	5%	50V
C208	1-130-495-00	MYLAR	0.1uF	5%	50V
		< CONNECTOR >			
* CN201	1-564-511-11	PLUG, CONNECTOR 8P			
* CN202	1-564-505-11	PLUG, CONNECTOR 2P			
		< IC >			
IC201	8-759-634-50	IC M5218AL			
		< RESISTOR >			
R201	1-249-429-11	CARBON	10K	5%	1/4W
R202	1-249-409-11	CARBON	220	5%	1/4W F (EXCEPT AEP,UK)
R203	1-249-429-11	CARBON	10K	5%	1/4W
R204	1-249-429-11	CARBON	10K	5%	1/4W
R205	1-249-427-11	CARBON	6.8K	5%	1/4W
R206	1-249-433-11	CARBON	22K	5%	1/4W
		< VARIABLE RESISTOR >			
RV201	1-225-826-11	RES, VAR, CARBON 20K (LEVEL)			
		< SWITCH >			
S201	1-771-632-12	SWITCH, ROTARY (MODE)			
**********					
	1-676-565-11	LED BOARD (AEP,UK)			
	1-676-815-11	LED BOARD (EXCEPT AEP,UK)			
		**********			
		< CONNECTOR >			
CN801	1-564-505-11	PLUG, CONNECTOR 2P			

Ref. No.	Part No.	Description			Remarks
		< DIODE >			
D801	8-719-038-54	DIODE SEL6414E-LC05 (POWER)			
**********					
	A-4428-530-A	MAIN BOARD, COMPLETE (EXCEPT AEP,UK)			
	A-4726-478-A	MAIN BOARD, COMPLETE (AEP,UK)			
		**********			
		< CAPACITOR >			
⚠C1	1-113-924-11	CERAMIC	0.0047uF	20.00%	250V (AEP,UK)
⚠C2	1-113-924-11	CERAMIC	0.0047uF	20.00%	250V (AEP,UK)
⚠C2	1-113-925-11	CERAMIC	0.01uF	20.00%	250V (EXCEPT AEP,UK)
C101	1-162-286-31	CERAMIC	220PF	10%	50V
C102	1-162-286-31	CERAMIC	220PF	10%	50V
C103	1-162-286-31	CERAMIC	220PF	10%	50V
C104	1-126-964-11	ELECT	10uF	20.00%	50V
C105	1-162-215-31	CERAMIC	47PF	5.00%	50V
C106	1-162-286-31	CERAMIC	220PF	10%	50V
C107	1-136-167-00	MYLAR	0.15uF	5.00%	50V
C108	1-136-159-00	MYLAR	0.033uF	5.00%	50V
C109	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C110	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C111	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C112	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C113	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C114	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C115	1-136-169-00	MYLAR	0.22uF	5.00%	50V
C301	1-126-964-11	ELECT	10uF	20.00%	50V
C302	1-136-165-00	MYLAR	0.1uF	5.00%	50V
C303	1-126-933-11	ELECT	100uF	20.00%	16V (AEP,UK)
C303	1-126-964-11	ELECT	10uF	20.00%	50V (EXCEPT AEP,UK)
C304	1-126-934-11	ELECT	220uF	20.00%	10V (EXCEPT AEP,UK)
C304	1-136-165-00	MYLAR	0.1uF	5.00%	50V (AEP,UK)
C305	1-126-964-11	ELECT	10uF	20.00%	50V (AEP,UK)
C305	1-162-294-31	CERAMIC	0.001uF	10%	50V (EXCEPT AEP,UK)
C306	1-126-933-11	ELECT	100uF	20.00%	16V (AEP,UK)

MAIN

Ref. No.	Part No.	Description			Remarks
C306	1-101-810-51	CERAMIC	100PF	5% 500V	(EXCEPT AEP,UK)
C307	1-126-963-11	ELECT	4.7uF	20.00% 50V	(AEP,UK)
C307	1-162-194-31	CERAMIC	3.9PF	10.00% 50V	(EXCEPT AEP,UK)
C308	1-126-947-11	ELECT	47uF	20.00% 25V	(AEP,UK)
C308	1-136-161-51	MYLAR	0.047uF	5.00% 50V	(EXCEPT AEP,UK)
C309	1-104-665-11	ELECT	100uF	20.00% 10V	(EXCEPT AEP,UK)
C310	1-126-963-11	ELECT	4.7uF	20.00% 50V	(EXCEPT AEP,UK)
C311	1-126-947-11	ELECT	47uF	20.00% 25V	(EXCEPT AEP,UK)
C312	1-128-551-11	ELECT	22uF	20.00% 63V	(EXCEPT AEP,UK)
C313	1-128-551-11	ELECT	22uF	20.00% 63V	(EXCEPT AEP,UK)
C314	1-162-282-31	CERAMIC	100PF	10% 50V	(EXCEPT AEP,UK)
C501	1-136-165-00	MYLAR	0.1uF	5.00% 50V	(AEP,UK)
C501	1-136-878-21	FILM	0.01uF	2.00% 100V	(EXCEPT AEP,UK)
C502	1-136-165-00	MYLAR	0.1uF	5.00% 50V	(AEP,UK)
C502	1-136-878-21	FILM	0.01uF	2.00% 100V	(EXCEPT AEP,UK)
C503	1-117-789-11	ELECT	6800uF	20.00% 63V	(EXCEPT AEP,UK)
C503	1-119-940-51	ELECT	4700uF	20.00% 50V	(AEP,UK)
C504	1-117-789-11	ELECT	6800uF	20.00% 63V	(EXCEPT AEP,UK)
C504	1-119-940-51	ELECT	4700uF	20.00% 50V	(AEP,UK)
C505	1-104-665-11	ELECT	100uF	20.00% 25V	
C506	1-104-665-11	ELECT	100uF	20.00% 25V	
C507	1-126-964-11	ELECT	10uF	20.00% 50V	
C508	1-126-964-11	ELECT	10uF	20.00% 50V	
C509	1-136-165-00	MYLAR	0.1uF	5.00% 50V	
C510	1-136-165-00	MYLAR	0.1uF	5.00% 50V	
C511	1-136-165-51	MYLAR	0.1uF	5.00% 50V	
C512	1-136-165-51	MYLAR	0.1uF	5.00% 50V	
		< CONNECTOR >			
* CN101	1-564-511-11	PLUG, CONNECTOR 8P			
CN301	1-564-509-11	PLUG, CONNECTOR 6P (EXCEPT AEP,UK)			
* CN301	1-564-510-11	PLUG, CONNECTOR 7P (AEP,UK)			
* CN302	1-565-792-11	PIN, CONNECTOR 2P			
* CN501	1-580-230-11	PIN, CONNECTOR (PC BOARD) 2P			
* CN502	1-564-687-11	PIN, CONNECTOR 3P			
		< DIODE >			
D101	8-719-991-33	DIODE 1SS133T-77			
D102	8-719-991-33	DIODE 1SS133T-77			
D103	8-719-991-33	DIODE 1SS133T-77			
D104	8-719-991-33	DIODE 1SS133T-77			

Ref. No.	Part No.	Description			Remarks
D301	8-719-991-33	DIODE 1SS133T-77			
D302	8-719-991-33	DIODE 1SS133T-77			
D303	8-719-991-33	DIODE 1SS133T-77			
D304	8-719-991-33	DIODE 1SS133T-77			
D501	8-719-312-47	DIODE RBA-406B			
D502	8-719-921-92	DIODE MTZJ-15B			
D503	8-719-921-92	MTZJ-15B			
		< FUSE >			
⚠F501	1-533-296-11	FUSE, GLASS TUBE 2A/125V (US,CND)			
⚠F501	1-532-500-51	FUSE T0.63AL/250V (EXCEPT US,CND)			
		< IC >			
IC101	8-759-634-50	IC M5218AL			
IC102	8-759-634-50	IC M5218AL			
IC103	8-759-634-50	IC M5218AL			
IC301	8-749-011-16	IC STK350-230 (EXCEPT AEP,UK)			
IC302	8-759-111-68	IC uPC1237HA			
		< JACK >			
J101	1-785-795-11	JACK, PIN 2P (LINE)			
		< TRANSISTOR >			
Q101	8-729-178-55	TRANSISTOR	2SC2785-E		
Q102	8-729-178-55	TRANSISTOR	2SC2785-E		
Q103	8-729-178-55	TRANSISTOR	2SC2785-E		
Q303	8-729-029-66	TRANSISTOR	DTC114ES		
		< RESISTOR >			
R101	1-249-425-11	CARBON	4.7K	5% 1/4W	F
R102	1-249-425-11	CARBON	4.7K	5% 1/4W	F
R103	1-249-437-11	CARBON	47K	5% 1/4W	
R104	1-249-437-11	CARBON	47K	5% 1/4W	
R105	1-249-429-11	CARBON	10K	5% 1/4W	
R106	1-249-429-11	CARBON	10K	5% 1/4W	
R107	1-249-429-11	CARBON	10K	5% 1/4W	
R108	1-249-429-11	CARBON	10K	5% 1/4W	
R109	1-249-417-11	CARBON	1K	5% 1/4W	F
R110	1-249-417-11	CARBON	1K	5% 1/4W	F
R111	1-249-429-11	CARBON	10K	5% 1/4W	
R112	1-249-417-11	CARBON	1K	5% 1/4W	F
R113	1-249-417-11	CARBON	1K	5% 1/4W	F
R114	1-249-441-11	CARBON	100K	5% 1/4W	
R115	1-249-429-11	CARBON	10K	5% 1/4W	
R116	1-247-843-11	CARBON	3.3K	5% 1/4W	
R117	1-249-424-11	CARBON	3.9K	5% 1/4W	F
R118	1-249-436-11	CARBON	39K	5% 1/4W	
R119	1-249-417-11	CARBON	1K	5% 1/4W	F
R120	1-249-435-11	CARBON	33K	5% 1/4W	
R121	1-249-425-11	CARBON	4.7K	5% 1/4W	F
R122	1-249-439-11	CARBON	68K	5% 1/4W	(AEP,UK)
R122	1-249-440-11	CARBON	82K	5% 1/4W	(EXCEPT AEP,UK)
R123	1-249-417-11	CARBON	1K	5% 1/4W	F
R124	1-249-435-11	CARBON	33K	5% 1/4W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description			Remarks
R125	1-249-425-11	CARBON	4.7K	5%	1/4W (AEP,UK)
R125	1-249-426-11	CARBON	5.6K	5%	1/4W (EXCEPT AEP,UK)
R126	1-249-435-11	CARBON	33K	5%	1/4W
R127	1-249-440-11	CARBON	82K	5%	1/4W
R128	1-249-424-11	CARBON	3.9K	5%	1/4W F
R129	1-249-427-11	CARBON	6.8K	5%	1/4W F
R130	1-249-427-11	CARBON	6.8K	5%	1/4W F
R131	1-249-441-11	CARBON	100K	5%	1/4W
R132	1-249-429-11	CARBON	10K	5%	1/4W
R133	1-249-429-11	CARBON	10K	5%	1/4W
R301	1-249-427-11	CARBON	6.8K	5%	1/4W F
R302	1-249-433-11	CARBON	22K	5%	1/4W (AEP,UK)
R302	1-249-441-11	CARBON	100K	5%	1/4W (EXCEPT AEP,UK)
R303	1-249-433-11	CARBON	22K	5%	1/4W (AEP,UK)
R303	1-249-401-11	CARBON	47	5%	1/4W F (EXCEPT AEP,UK)
R304	1-249-412-11	CARBON	390	5%	1/4W (AEP,UK)
R304	1-249-438-11	CARBON	56K	5%	1/4W (EXCEPT AEP,UK)
⚠R305	1-212-857-00	FUSIBLE	10	5%	1/4W (AEP,UK)
R305	1-249-438-11	CARBON	56K	5%	1/4W (EXCEPT AEP,UK)
R306	1-249-416-11	CARBON	820	5%	1/4W F (EXCEPT AEP,UK)
R306	1-249-429-11	CARBON	10K	5%	1/4W (AEP,UK)
R307	1-249-413-11	CARBON	470	5%	1/4W F (EXCEPT AEP,UK)
R307	1-249-426-11	CARBON	5.6K	5%	1/4W (AEP,UK)
⚠R308	1-212-857-00	FUSIBLE	10	5%	1/4W (EXCEPT AEP,UK)
R309	1-249-441-11	CARBON	100K	5%	1/4W
R310	1-249-441-11	CARBON	100K	5%	1/4W
R311	1-249-427-11	CARBON	6.8K	5%	1/4W (AEP,UK)
R311	1-249-429-11	CARBON	10K	5%	1/4W (EXCEPT AEP,UK)
R312	1-249-429-11	CARBON	10K	5%	1/4W
R313	1-215-892-11	METAL OXIDE	1K	5%	2W (EXCEPT AEP,UK)
R313	1-216-455-11	METAL OXIDE	560	5%	2W (AEP,UK)
R314	1-249-439-11	CARBON	68K	5%	1/4W
R315	1-249-430-11	CARBON	12K	5%	1/4W
R316	1-215-868-00	METAL OXIDE	680	5%	1W (AEP,UK)
R316	1-215-870-11	METAL OXIDE	1.5K	5%	1W (EXCEPT AEP,UK)
⚠R317	1-249-393-11	CARBON	10	5%	1/4W F (EXCEPT AEP,UK)
⚠R318	1-249-393-11	CARBON	10	5%	1/4W F (EXCEPT AEP,UK)
R501	1-216-456-00	METAL OXIDE	820	5%	2W (AEP,UK)
R501	1-215-893-11	METAL OXIDE	1.5K	5%	2W (EXCEPT AEP,UK)
R502	1-215-893-11	METAL OXIDE	1.5K	5%	2W (EXCEPT AEP,UK)
R502	1-216-456-00	METAL OXIDE	820	5%	2W (AEP,UK)
		< RELAY >			
RY301	1-515-920-11	RELAY (24V)			
		< TERMINAL >			
TM101	1-537-922-11	TERMINAL BOARD (SPEAKER)			
**********					
	1-676-714-11	POWER BOARD (AEP,UK)			
	1-676-813-11	POWER BOARD (EXCEPT AEP,UK)			
		**********			
		< CAPACITOR >			
C401	1-126-947-11	ELECT	47uF	20.00%	25V (EXCEPT AEP,UK)
C401	1-126-965-11	ELECT	22uF	20.00%	50V (AEP,UK)
		< CONNECTOR >			
* CN401	1-564-509-11	PLUG, CONNECTOR 6P (EXCEPT AEP,UK)			
* CN401	1-564-510-11	PLUG, CONNECTOR 7P (AEP,UK)			
		< IC >			
IC401	8-759-660-72	IC TDA7294 (AEP,UK)			
		< TRANSISTOR >			
Q401	8-729-141-30	TRANSISTOR 2SC3623ATP-LK			(EXCEPT AEP,UK)
Q402	8-729-119-76	TRANSISTOR 2SA1175-HFE (EXCEPT AEP,UK)			
Q403	8-749-010-25	IC MN2488-OPY-M (EXCEPT AEP,UK)			
Q404	8-749-010-26	IC MP1620-OPY-M (EXCEPT AEP,UK)			
		< RESISTOR >			
R401	1-249-429-11	CARBON	10K	5%	1/4W (AEP,UK)
R401	1-249-437-11	CARBON	47K	5%	1/4W (EXCEPT AEP,UK)
R402	1-249-421-11	CARBON	2.2K	5%	1/4W F (EXCEPT AEP,UK)
R402	1-249-429-11	CARBON	10K	5%	1/4W (AEP,UK)
R403	1-249-414-11	CARBON	560	5%	1/4W F (EXCEPT AEP,UK)
⚠R404	1-247-703-11	CARBON	180	5%	1/4W F (EXCEPT AEP,UK)
⚠R405	1-247-703-11	CARBON	180	5%	1/4W F (EXCEPT AEP,UK)
⚠R406	1-217-151-00	METAL	0.22	10%	2W (EXCEPT AEP,UK)
⚠R407	1-217-151-00	METAL	0.22	10%	2W (EXCEPT AEP,UK)
**********					

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ver 1.1 2004.01

POWER SWITCH

Ref. No.	Part No.	Description	Remarks
	1-676-716-11	POWER SWITCH BOARD (AEP,UK)	
	1-676-814-11	POWER SWITCH BOARD (EXCEPT AEP,UK)	
		**********	
		< CAPACITOR >	
⚠C1	1-113-925-11	CERAMIC 0.01uF 20.00% 250V	(EXCEPT AEP,UK)
		< CONNECTOR >	
CN1	1-564-321-00	PIN, CONNECTOR 2P	
		< SWITCH >	
⚠S1	1-554-920-11	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	(AEP,UK)
⚠S1	1-554-920-61	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)	(EXCEPT AEP,UK)
**********			
		MISCELLANEOUS	
		**********	
⚠52	1-696-571-21	CORD, POWER (UK)	
⚠52	1-696-845-31	CORD, POWER (AUS)	
⚠52	1-782-603-11	CORD, POWER (AEP,MY,SP,G)	
⚠52	1-783-531-12	CORD, POWER (US,CND)	
⚠52	1-783-941-21	CORD, POWER (AR)	
104	1-694-516-11	TERMINAL, SPEAKER	
154	1-694-516-11	TERMINAL, SPEAKER	
⚠T101	1-435-335-11	TRANSFORMER, POWER (US,CND)	
⚠T101	1-435-336-11	TRANSFORMER, POWER (AEP,UK,G)	
⚠T101	1-435-337-11	TRANSFORMER, POWER (AR,MY,SP,AUS)	
SP1	1-529-593-11	SPEAKER (16cm)	
SP2	1-529-596-11	SPEAKER (5X10cm)	
SP3	1-529-596-11	SPEAKER (5X10cm)	
SP4	1-529-595-11	SPEAKER (5X10cm)	
**********			

Ref. No.	Part No.	Description	Remarks
		ACCESSORIES & PACKING MATERIALS	
		**********	
	1-769-329-21	CORD, CONNECTION (PIN-PIN)	
	1-769-433-11	CORD, SPEAKER (WMS315)	
	1-769-433-21	CORD, SPEAKER	
	4-226-697-11	MANUAL, INSTRUCTION	(ENGLISH/SPANISH)(US,UK,SP,MY)
	4-226-697-21	MANUAL, INSTRUCTION	(ENGLISH/FRENCH)(AEP,CND,AR,G,AUS)
	4-226-697-31	MANUAL, INSTRUCTION	(GERMAN/SPANISH/DUTCH/SWEDISH/ITALIAN/ PORTUGUESE/DANISH/FINNISH/POLISH/RUSIAN)(AEP,G)
	4-226-697-41	MANUAL, INSTRUCTION	(SPANISH/CHINESE)(SP,MY,AR)
	4-972-322-01	FOOT (Y)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#2	7-685-165-01	SCREW +PTP 4X25 TYPE1	
#3	7-685-647-79	SCREW +P 3X10 TYPE2 NON-SLIT	
#4	7-685-648-79	SCREW +P 3X12 TYPE2 NON-SLIT	
#6	7-685-660-19	SCREW +BVTP 4X10 TYPE2 N-S	
#7	7-685-663-79	SCREW +BVTP 4X16 TYPE2 N-S	
#8	7-685-664-79	SCREW +PTP 4X20 TYPE1	
#9	7-685-665-79	SCREW +BVTP 4X25 TYPE2 N-S	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MEMO

REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2000.02	New
1.1	2004.01	Addition of information for AEP and UK models (SPM-03132)